

**OWNER'S INSTRUCTION MANUAL
FOR JOHNSON CONTROLS MODEL T53
MICROELECTRONIC
SETBACK THERMOSTAT**

JOHNSON
CONTROLS

Control Products
Division

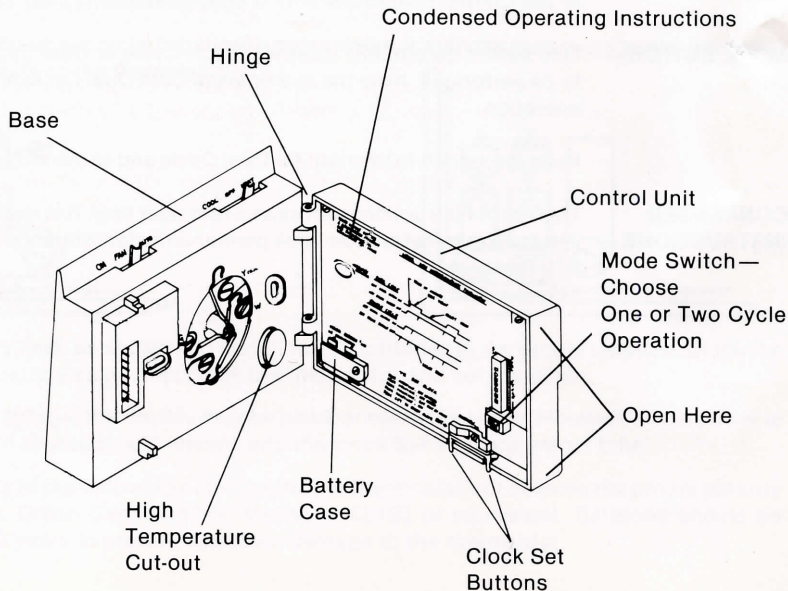
HINTS

- (1) Most of the savings possible using daily setback techniques occur with 8 to 10 degrees of setback.
- (2) For longer periods, larger setbacks can save more money. However, be careful of plants and animals when selecting the temperature settings.
- (3) For occasions when day temperatures are required past midnight (such as parties) set the night temperature to the same setting as the day temperature, and reset at bed time to the proper night temperature.
- (4) **Remember**-The best energy savings will result from using setback techniques consistently.

NOTES ON TEMPERATURE CONTROL

- (1) Do not expect the room temperature reading to be exactly equal to the setting all the time. In steady operation a temperature difference of 2 degrees is typical.
- (2) The T53 thermostat has internal timers to protect your system from short cycling. This means that when your heating or air conditioning comes on, it will stay on for at least 4 minutes. When it goes off, it will stay off at least 4 minutes. However, it will respond within 10 seconds if you change a temperature setting manually.

THERMOSTAT — OPEN TO SHOW INTERIOR DETAILS.



TO OPEN UNIT — Keeping the base stationary, grasp the Control Unit where indicated and pull firmly. The unit will swing open to the right.

TO CLOSE UNIT — Swing the Control Unit to the left until it stops, then push on the left side of the Control Unit firmly until it snaps closed.

MODE SWITCH — This switch determines whether Single Cycle or Dual Cycle operation is to be performed. Note the examples of both Dual Cycle and Single Cycle operation.

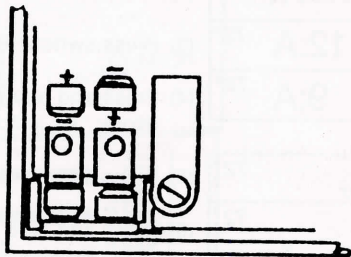
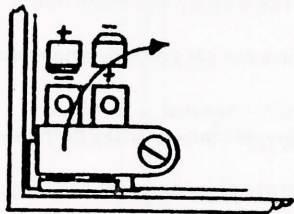
Push the switch to the right for Dual Cycle and to the left for Single Cycle.

CONDENSED INSTRUCTIONS — This set of instructions serves as a reminder only. It is recommended that you keep this instruction book permanently for reference in case any difficulties arise.

OPTIONAL BATTERIES

If a power outage of more than 30 seconds occurs, the clock will be reset to 12:30. If you notice the clock indicating 12:30 when it should not, a power failure has occurred and the clock will have to be set to the correct time.

Since power failures are quite common in some areas, a standby battery case has been provided on the inside of the thermostat.



Open the battery case as shown and install two (2) batteries in the proper location. Close the cover over the battery case, then close the thermostat and set the clock.

During a power outage, the display may be blank or not make sense. However, when power is restored, normal operation will resume and the clock will indicate proper time.

You may use any of the following batteries in your thermostat but observe the proper polarity when installing. Union Carbide #393, Mallory #10L123 or equivalent. Batteries should be replaced every 2 years to prevent corrosion damage to the thermostat.

To Set the Clock—Setting the clock of your thermostat is similar to setting a digital watch. Follow this procedure;

Display

:30	72°
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(1) Press switch “F” upward and release. The display will show minutes.

:47	72°
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(2) Press and hold switch “S” until the minutes are set properly and release.

12:A	72°
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(3) Press switch “F” upward and release. The display will show hours.

9:A	72°
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(4) Press and hold switch “S” until the hours are set properly and release.
(Note: “A” is A.M. and “P” is P.M.)

▽	72°
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(5) Press switch “F” and release. The display will show the day of the week.

▽	72°
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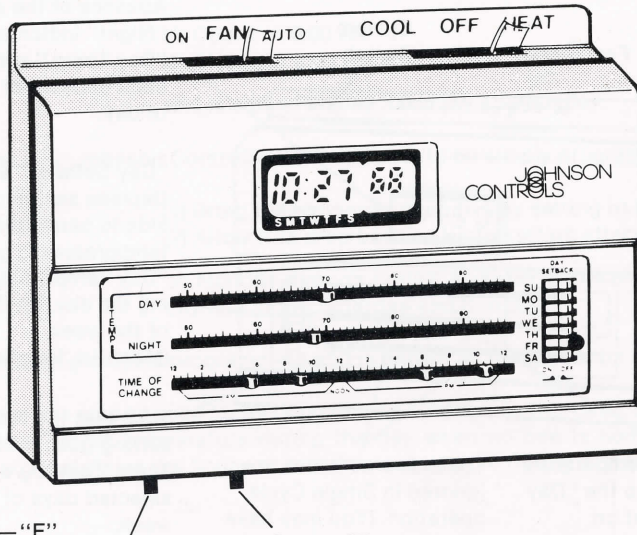
(6) Press and hold switch “S” until the day of the week is set properly.

(7) Press switch “F” to return to the full display. Check that the time is properly set.

9:47	72°
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(8) Press switch “S” to start the clock. The colon will blink if the clock is running. To stop the clock set the minutes to a new reading.

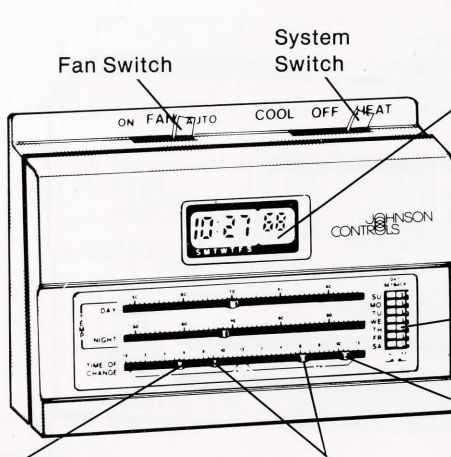
LOCATION OF CLOCK SET BUTTONS



Function — “F”
Chooses Minutes, Hours and
Day of Week to be set by
“Set” switch.

Set — “S”
Changes units chosen by “Function” switch.

EXAMPLE OF SINGLE CYCLE PROGRAMMING



Absence of the word "Night" indicates that the "Day Temp." setpoint has been chosen for this time of day.

"Day Setback" switch—Depress switch on "On" side to cause the room temperature to go to the "Day Temp." setpoint during the day, on that day of the week.
(Mon.-Fri. for example)

Time that the temperature setting goes to the "Night Temp." setting on selected days of the week.
(Mon.-Fri.) (6:00 P.M.)

Time that the temperature setpoint goes to the "Day Temp." setpoint on selected days of the week.
(Mon.-Fri.) (8:30 A.M.)

These two switches are ignored in Single Cycle operation. (You may have to move them to place the other switches in their desired positions.)

Another application of the Johnson Controls Microelectronic Thermostat is illustrated by the example of a small business, which:

- (1) Opens at 9:00 AM
- (2) Closes at 6:00 PM

and is closed all day Saturday and Sunday.

In this case, your Johnson Controls Thermostat could be simply programmed to:

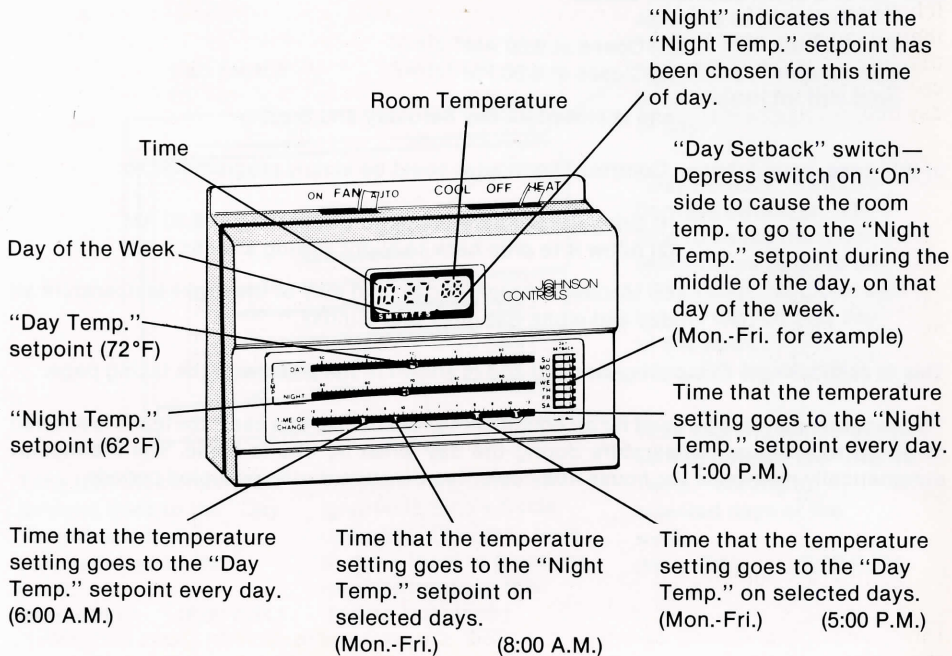
- (1) Bring the temperature up to Day setting at 8:30 AM
- (2) Allow it to drop back to Night setting after 6:00 PM

on Monday through Friday, and stay at the Night temperature all day and night, Saturday and Sunday.

This is called Single Cycle programming and is shown in the picture on the facing page.

This program can also be used for air conditioning “set up”. In this case, the home is allowed to go up to a higher temperature during the day when no one is home. The thermostat automatically maintains the house at a cooler temperature during occupied periods.

EXAMPLE OF DUAL CYCLE PROGRAMMING



SAVING ENERGY

It has been well established that one effective way to save energy (and money) is to set your thermostat as low as possible in winter and as high as possible in summer. However, it is also true that a constant temperature is not always necessary or desirable. Many people prefer a cooler temperature at night than during the day. Also, many homes are empty during the mid-day hours, 5 days a week. For example, during the heating season:

If you:

- (1) Wake up at 6:30 AM
- (2) Leave the house at 8:00 AM
- (3) Come home at 5:30 PM
- (4) Go to bed at 11:00 PM

during the week, and are home during the day on weekends, you could save money by changing your thermostat temperature setting daily. However, constant manual changing of temperature settings is both inconvenient and unreliable. Using your Johnson Controls Microelectronic Thermostat to change the temperature settings automatically is a real convenience and money saver.

You could program your Johnson Controls Thermostat to:

- (1) Take the temperature from the Night setting to the Day setting at 6:00 AM
- (2) Go back to the Night setting at 8:00 AM
- (3) Come back up to the Day setting at 5:00 PM
- (4) Go back to the Night setting at 11:00 PM

During the week

- (1) Go to day setting at 6:00 AM
- (2) Go to night setting at 11:00 PM

On Saturdays & Sundays

This is called Dual Cycle programming. A "T53" programmed to perform these temperature changes automatically is shown on the facing page at left.

OPERATION

- (1) Decide whether Dual-Cycle operation or Single Cycle operation is required in your installation. (Review examples on pages 9 and 11 in this booklet).
- (2) Set the mode switch to proper position. Close the thermostat.
- (3) Set the clock. See page 6.
- (4) Set temperatures and times as shown in the examples by sliding the switches to the proper settings.
- (5) Set the Day Setback switches to the desired position as explained in examples.
- (6) Set the Fan switch to auto. (Unless continuous fan operation is desired).
- (7) Set the system switch to the proper setting.

IN CASE OF DIFFICULTY

- (1) If no proper operation can be obtained, it is possible that high temperatures may have caused the overtemp protector to open. This condition can be corrected by following this procedure:
 - (1) Open the thermostat
 - (2) Touch a cool object (a quarter cooled down in the refrigerator will do nicely) to the silver surface of the overtemp protector. This will reset it.
 - (3) Close the thermostat and recheck for proper operation.
- (2) Improper operation may occasionally occur due to external influences such as heavy static discharges, voltage surges, and so forth. If the thermostat does not seem to be functioning properly, follow this procedure:
 - (1) Open the thermostat
 - (2) Remove the batteries (If installed. If not skip to Step 3)
 - (3) Wait two (2) minutes (this allows the circuit to recover)
 - (4) Re-install the batteries (if desired)
 - (5) Close the thermostat
 - (6) Set the clock to the proper time

JOHNSON CONTROLS LIMITED WARRANTY

Your new electronic thermostat is warranted to be free from defects in material and workmanship for a period of one (1) year from date of purchase.

The warranty applies only to the Original Owner and DOES NOT COVER: DAMAGE WHILE IN TRANSIT FOR REPAIRS, REPLACEMENT OF DISPOSABLE BATTERIES, FAILURE TO FOLLOW RECOMMENDED INSTALLATION PROCEDURES, FAILURE TO FOLLOW THE INSTRUCTION MANUAL, REPAIRS ATTEMPTED BY ANY UNAUTHORIZED PERSON OR AGENCY, OR OTHER UNREASONABLE USE NOT DUE TO DEFECTS IN MATERIALS OR WORKMANSHIP. THIS WARRANTY IS ALSO VOID IF THE SERIAL NUMBER HAS BEEN ALTERED OR DEFACED.

ANY IMPLIED WARRANTIES ARISING OUT OF THIS SALE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE ABOVE ONE (1) YEAR PERIOD. JOHNSON CONTROLS LIABILITY IS LIMITED SOLELY TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE UNIT AND IN NO EVENT SHALL INCLUDE DAMAGES FOR LOSS OF USE OF THE THERMOSTAT OR OTHER INCIDENTAL OR CONSEQUENTIAL COSTS, EXPENSES OR DAMAGES INCURRED BY THE OWNER.

Should warranty service be required, return the thermostat to the point of purchase along with a short description of the problem you had with the thermostat, the date it was purchased, and a copy of your sales slip or similar proof of purchase. **The warranty is valid only when a copy of your sales slip or similar proof of purchase accompanies the thermostat returned for warranty service.**

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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